

**CLAIMS**

What is claimed is:

1. A tangible medium, comprising:

5 code disposed on the tangible medium, wherein the code comprises:

analyzer code configured to determine a device bandwidth for the device and to achieve a bandwidth evaluation of the device bandwidth versus first and second available bandwidths of first and second controllers, respectively; and

router code configured to route the device to one of the first and second controllers based on the bandwidth evaluation.

10 2. The tangible medium of claim 1, comprising ROM BIOS.

15 3. The tangible medium of claim 1, wherein the code is at least partially disposed in a device driver.

4. The tangible medium of claim 1, wherein the code comprises device detection code configured to detect the device.

20 5. The tangible medium of claim 1, wherein the code comprises controller detection code configured to detect the first and second controllers.

6. The tangible medium of claim 1, wherein the analysis code is configured to evaluate viability of a plurality of device-controller configurations.

5           7. The tangible medium of claim 6, wherein the analysis code is configured to evaluate all possible device-controller configurations and to determine an optimal configuration based on the device bandwidth and the first and second available bandwidths.

8. A tangible medium, comprising:  
10           code disposed on the tangible medium, wherein the code is configured to analyze a desired bandwidth of the device against available bandwidths of a plurality of controllers, to select one of the plurality of controllers for the device based on the analysis of the desired bandwidth against the available bandwidths, and to route the device automatically to the selected one of the plurality of controllers.

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9. The tangible medium of claim 8, wherein the code is configured to analyze desired bandwidths of multiple devices including the device against available bandwidths of the plurality of controllers and to select a routing configuration of the multiple devices to the plurality of controllers based on the analysis of the desired bandwidths against the available bandwidths.  
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10. The tangible medium of claim 8, wherein the code is configured to detect the desired bandwidth for the device.

11. The tangible medium of claim 8, wherein the code is configured to detect the 5 available bandwidths for the plurality of controllers.

12. The tangible medium of claim 8, wherein the code is configured to activate a switch to couple the device to the selected one of the plurality of controllers.

10 13. The tangible medium of claim 8, wherein the code is configured to evaluate viability of a plurality of hypothetical configurations each having the device coupled to one of the plurality of controllers.

15 14. The tangible medium of claim 8, wherein the code is configured to determine possible device-controller configurations, to evaluate at least one of the possible device-controller configurations, and to select one of the possible device-controller configurations that provides the desired bandwidth to the device.

20 15. The tangible medium of claim 8, wherein the code is configured to evaluate all possible device-controller configurations and to select an optimal device-controller configuration based on the analysis of the desired bandwidth against available bandwidths.

16. A system for automatically routing a device to a controller, comprising:
  - means for analyzing a desired bandwidth of the device against available bandwidths of a plurality of controllers; and
  - 5 means for selecting one of the plurality of controllers for the device based on the analysis of the desired bandwidth against the available bandwidths.
17. The system of claim 16, comprising means for automatically routing the device to the selected one of the controllers.
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18. The system of claim 16, comprising means for determining the desired bandwidth for the device.
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19. The system of claim 16, comprising means for determining the available bandwidths for the plurality of controllers.
20. A method of providing device-to-controller routing, comprising:
  - providing an analyzer mechanism configured for analyzing a desired bandwidth of a device versus available bandwidths of device controllers; and
  - 20 providing a router mechanism configured for routing the device to one of the device controllers based on the analysis.

21. The method of claim 20, comprising providing a computer having the analyzer mechanism and the router mechanism.

5 22. The method of claim 20, comprising providing a device controller having the analyzer mechanism and the router mechanism.

23. The method of claim 20, comprising providing a controller detection mechanism configured to detect characteristics of the device controllers.

10 24. The method of claim 20, comprising providing a device detection mechanism configured to detect characteristics of the device.

15 25. The method of claim 20, wherein providing the routing mechanism comprises providing a device-controller configuration mechanism configured to evaluate viability of a plurality of device-controller configurations between the device and the device controllers.

20 26. The method of claim 20, wherein providing the routing mechanism comprises providing an automatic switching mechanism configured to couple the device switchably to the one of the device controllers based on the analysis.